

Remarks

Claims 1-20 are pending in the application. Claims 1, 2, 6, 10, 14, 16 and 17 are rejected, while claims 3-5, 7-9, 11-13, 15 and 18-20 are objected to. By this paper, claims 1, 16 and 18-20 are amended, and claim 17 is canceled. Based on the following, consideration of the amended claims, and reconsideration of the remaining claims, are requested.

Claim Rejections—35 U.S.C. § 102

The Examiner rejected claims 1 and 2 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,618,243 (Kondo et al.). Applicants note that by this paper, claim 1 is amended to more particularly point out and distinctly claim the subject matter of the invention. In particular, the "wherein clause" of claim 1 is amended, thereby making it even more clear that "the automatic downshifting of the transmission" refers to the step of "automatically downshifting the transmission" recited earlier in the claim. With regard to this element of amended claim 1, Kondo et al. does not expressly or inherently describe "automatically downshifting the transmission to a lower gear... when it is determined that automatic engine braking is desired and at least one vehicle condition matches a corresponding predetermined vehicle condition, and wherein the automatic downshifting of the transmission can occur when the brake pedal is engaged, and when the brake pedal is disengaged."

Kondo et al. does describe, with reference to Figure 7, a "descending road downshift control". Specifically, Kondo et al. describes the determination of a weight and gradient resistance, and how a comparison of this value to certain threshold values can result in the output of a downshift command signal. (Col. 16, ll. 44-67 to Col. 17, ll. 1-18.) Kondo et al. is silent, however, regarding whether this downshifting of the transmission can occur when the brake pedal is engaged and when it is disengaged, as specifically recited in amended claim 1. Thus, amended claim 1 contains elements which are neither expressly nor inherently described in Kondo et al.

In addition to the foregoing, amended claim 1 further recites the step of "increasing at least some of the upshift points when it is determined that automatic engine braking is desired...." No such elements are expressly or inherently described in Kondo et al. For example, Kondo et al. shows in Figure 10 a normal upshift point (A) and an increased upshift point (B) for the same throttle opening position. According to Kondo et al., point B "serves as an upshift point in the sporty pattern 2016B, as shown in FIG. 10 and in the functional block 2020D in FIG. 9." (Col. 22, ll. 36-38.) According to Kondo et al., "sporty driving indicates the driving where a high output is taken out from the engine to operate a vehicle at a relatively higher speed with use of high acceleration performance." (Col. 20, ll. 17-21.) Thus, the sporty driving condition does not correspond to the condition when automatic engine braking is desired. In fact, the sporty driving condition is virtually the opposite of a condition where automatic engine braking is desired, since the sporty condition desires "high acceleration performance;" whereas, automatic engine braking is desired for deceleration of a vehicle. Therefore, not only does Kondo et al. fail to expressly describe each and every element of amended claim 1, it also fails to inherently describe the elements.

Claim 2 depends directly from amended claim 1, and therefore contains all of the limitations of amended claim 1, as well as additional limitations which further distinguish it from the cited reference. Therefore, claim 2 also contains elements which are neither expressly nor inherently described by Kondo et al., and Kondo et al. does not anticipate claim 2.

Claim Rejections—35 U.S.C. § 103

The Examiner rejected claim 6 under 35 U.S.C. § 103(a) as being unpatentable over Kondo et al. as applied to claim 1, and further in view of U.S. Patent No. 6,199,001 (Ohta et al.). Claim 6 of the present application depends directly from amended claim 1, and recites that "determining when automatic engine braking is desired includes determining the position of a manually operated switch." Ohta et al. describes the use of a select pattern switch 61, which may be used to select different shift patterns, such as an economy pattern, a normal

pattern, and a power pattern. (Col. 7, ll. 60-67 to Col. 8, ll. 1-4.) As noted above, amended claim 1 recites "increasing at least some of the upshift points when it is determined that automatic engine braking is desired...." Figure 4 in Ohta et al. shows shift boundaries H1, H2 and H3 having respectively increasing upshift points. As described in Ohta et al., H1 is the shift boundary of the economy pattern, H2 is the shift boundary of the normal pattern, and H3 is the shift boundary of the power pattern. (Col. 7, ll. 63-65.) Thus, in Ohta et al. the upshift points are increased as the vehicle performance requirements are increased. This is the opposite of how the upshift points are increased as recited in amended claim 1 of the present application (and therefore dependent claim 6).

Ohta et al. specifically states that the transmission shift pattern is changed to the power pattern "when the road requires an increase in the driving force, for example a climbing road." (Col. 15, ll. 61-66.) This is just the opposite of when automatic engine braking would be desired, which, for example, may occur on a descending slop. Therefore, Ohta et al. not only fails to teach or suggest all of the claim limitations of amended claim 1 (and therefore dependent claim 6), but also teaches away from these claims by describing an increase in the upshift at a time when automatic engine braking would specifically not be desired.

Ohta et al. further describes how the control system reacts when a down slop is detected—i.e., when a situation occurs where automatic engine braking might be desired. The control system described in Ohta et al. "basically prohibits shifting up when a down slop is detected." (Col. 16, ll. 2-6.) Whereas amended claim 1 of the present application (and therefore dependent claim 6) recites "increasing at least some of the upshift points when it is determined that automatic engine braking is desired," the control system of Ohta et al. prohibits upshifting. In summary, Ohta et al. does not increase upshift points when automatic engine braking is desired; rather, Ohta et al. teaches a complete prohibition of upshifting in these situations. Moreover, although Ohta et al. does teach increasing upshift points, it is during a time when an increase in driving force is desired, which is just the opposite of situations where automatic engine braking is desired. Therefore, the combination of Kondo et al. and Ohta et al. does not render obvious claim 6 of the present application.

The Examiner rejected claims 10, 14 and 16-17 under 35 U.S.C. § 103(a) as being unpatentable over Kondo et al. in view of U.S. Patent Application Publication No. 2002/0158511 (Baumgartner et al.). First, Applicants note that Baumgartner et al. describes a brake by wire electrical system architecture, which is not relevant to the automatic transmission control of the present application. Therefore, Applicants respectfully submit that there is no suggestion or motivation to combine Baumgartner et al. with the other references. Even if, however, Baumgartner et al. is combined with Kondo et al., the combination does not render obvious any of the rejected claims. For example, claim 10 recites a method for controlling an automatic transmission in a vehicle, where the method includes "increasing at least some of the upshift points when it is determined that automatic engine braking is desired...." As noted above, Kondo et al. does not expressly or inherently describe such an element; in addition, Kondo et al. does not teach or even suggest such a limitation.

Kondo et al. does describe increasing the transmission upshift points for "sporty" driving, but sporty driving conditions often require high engine output, not engine braking as specifically recited in claim 10 of the present application. Thus, Kondo et al., like Ohta et al., not only fails to teach or suggest all of the claim limitations of the present invention, but actually teaches away from the present invention. Therefore, in addition to there being no suggestion or motivation to combine Kondo et al. with Baumgartner et al., even if such combination is made, it still does not render obvious claim 10 of the present application. Moreover, because claim 14 depends directly from claim 10, and contains additional limitations, claim 14 is also not rendered obvious by the cited references.

By this paper, claim 16 is amended to more particularly point out and distinctly claim the subject matter of the present invention. Specifically, claim 16 recites a system for controlling an automatic transmission in a vehicle where a controller is configured to select a second shift mode when it is determined that automatic engine braking is desired, and further that the controller increases "at least some of the upshift points when the second shift mode is selected...." Therefore, the analysis used with claim 10 above and the combination of Kondo et al. and Baumgartner et al. also applies to amended claim 16, which is not obvious in light

of the cited combination. By this paper, claim 17 is canceled, its limitations being incorporated into amended claim 16. Further, by this paper claims 18-20 are amended to depend directly from amended claim 16, these changes being necessitated by the cancellation of claim 17.

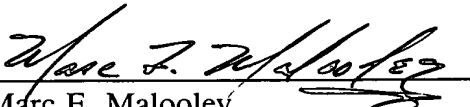
Allowable Subject Matter

The Examiner objected to claims 3-5, 7-9, 11-13, 15 and 18-20 as being dependent upon a rejected base claim, but indicated that each would be allowable if rewritten in independent form to include all of the limitations of its respective base claim and any intervening claims. As discussed above, the base claim for each of these dependent claims is believed to be allowable, and therefore Applicants respectfully request removal of the objections to these dependent claims.

Based on the foregoing, allowance of each of the pending claims is requested.

Respectfully submitted,

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